DOCUMENT RESUME

ED 386 337 RC 020 075

AUTHOR Hobbs, Daryl
TITLE Human Capital: The Issues, Enablers and Blocks in Institutional Change.
PUB DATE Jan 95
NOTE 18p.; In: Increasing Understanding of Public Problems and Policies, 1994. National Public Policy Education Conference; see RC 020 070.
PUB TYPE Information Analyses (070) -- Viewpoints (Opinion/Position Papers, Essays, etc.) (120) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Economic Development; *Educational Change; Educational Objectives; *Educational Policy; *Education Work Relationship; Elementary Secondary Education; Holistic Approach; *Human Capital; Labor Supply; Misconceptions; Policy Formation; Productivity; Public Education; Relevance (Education)
IDENTIFIERS *Barriers to Change; *Public Policy Education

ABSTRACT

In the last decade, unprecedented rates of job growth and improvements in adult education were accompanied by increased numbers of children living below the poverty line and a decline in real income for most families. There are several possible explanations: (1) a kind of job growth that produces disincentives for a significant number of people to invest in human capital; (2) an excessively narrow public and political definition of human capital and, therefore, less-than-optimal human capital investments; and (3) the absence of a mutually reinforcing "mix" of institutions (policies) that would provide greater incentives for public and private human capital investments and produce a greater return on investments made. This paper suggests that narrow policy definitions of human capital (as educational attainment) and institutional change (as school reform) are barriers to necessary human capital production. Public policy education can contribute to human capital production by providing the relatively accessible audience of local educational policymakers with research findings and knowledge that counter prevailing misconceptions about effective public education. The policy education process also includes encouraging an approach that integrates education and local community and economic development efforts. Contains 30 references. (JAT)

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HUMAN CAPITAL: THE ISSUES, ENABLERS AND BLOCKS IN INSTITUTIONAL CHANGE

Daryl Hobbs
University of Missouri

The past decade has produced almost unprecedented rates of job growth and improvements in adult education attainment. Yet, during the same decade those trends were joined by substantial increases in the number of children living below the poverty line and declining real income for a majority of families despite an increased number of generally better-educated workers per family.

Insofar as the prevailing political definition of human capital is limited to educational attainment and/or job-acquired experience and training, the U.S. work force is improving as rapidly now as it did during the so-called golden years of the 1950s and 1960s (Packer). Indeed, human capital investments today exceed net annual investments in plant and equipment (Vaughan, p. 2). On the surface it appears that stable or stagnant rates of productivity growth and declining real income for many workers must be the result of less effective investments in knowledge, physical and human capital. In the words of Packer, ". . . it is possible that schooling is less valuable today because the student body and the economy have changed much more quickly than the education and training system have adapted to these new realities" (Packer, p. 54).

This paper will focus on several possible explanations: 1) a kind of job growth that is producing disincentives for a significant number of individuals and families to invest in human capital; 2) an excessively narrow public and political definition of human capital and, therefore, less-than-optimal human capital investments; and 3) the absence of a mutually reinforcing "mix" of institutions (policies) that would provide greater incentives for public and private human capital investments and produce a greater return on investments made.

The title assigned to this presentation specifies two objects of inquiry: human capital and institutional change. The title also implies that society's needs for human capital are not being met and that institutional change is necessary in order to satisfy that need. More of the same is not doing the job.

But both human capital and institutional change are rather vague and abstract concepts, although, as operationally defined in policies, they have taken on excessively specific and tangible meanings, e.g., human capital continues to be equated with number of years of

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school completed and institutional change has taken the form of a complementary emphasis on school reform. Perhaps exemplified by the notorious report, *Nation at Risk*, a view has prevailed that the nation's economic competitiveness is linked to the performance of its educational system; therefore, if the nation is less economically competitive in a global context, the educational system must be failing.

We will present a view that human capital and institutional change are concepts vital to the future well-being of citizens, communities and the nation, but that their narrow policy definition is constraining the production of necessary human capital and the institutional change necessary to achieve that production.

Toward Broadening the Definition of the Problem

The contributions of Douglas North to improving our understanding of the historical connection between societal institutions and economic performance have been recognized by his recent receipt of the Nobel prize for economics. We will borrow some of North's basic ideas in analyzing who is producing human capital, how it is being defined, and what that has to do with institutional change.

Beliefs of a people are the foundation of a society and these beliefs are enacted through, and embodied in, institutions that constrain some actions and reward others (North). The institutions of a society are interrelated and it is the "mix" of institutions at any time in history that defines the incentive structure of a society and, therefore, affects the economic performance and relative well-being of societies.

In North's perspective, societies throughout history can be described as being either "learning" or "stuck." According to North, "Societies that get stuck embody belief systems and institutions that fail to confront and solve new problems of societal complexity" (North, p. 15). Historically, stuck societies and economies have been more prevalent than learning societies. Learning societies, in North's view, are somewhat analogous to what other historians have called "creative epochs"—periods of institutional change, creativity and vibrant economic performance. Pertinent here is the idea that it is the "mix" of institutions, not any single institution alone, that determines whether a society is in a learning or a stuck mode.

In North's view, societal institutions are analogous to the rules that provide the competitive framework for any team sport. Organizations are analogous to the teams that play the game and the strategies they devise for competing within the constraints established by the institutions. It is learning by individuals and organizational entrepreneurs that is the most fundamental source of institutional change (North, p. 9). The rate of learning determines the rate of change. As a result of learning, organizations devise competitive strategies that test the limits of institutional constraints. The actions of organizations are the source of innovation and, over time, institutional change. We will return to this point in emphasizing the role of individual schools (the organizations) in producing innovations having the potential of contributing to change of the education institution.

Taking a cue from North, we will contend that the human capital issue is largely one of institutional reform/restructuring, not just of "improving" education and/or human capital market imperfections. There is much evidence that contemporary human-capital-producing institutions are stuck and embody a set of beliefs out of touch with current economic and social realities. As this paper emphasizes, there are many widely-held beliefs about public education, schools and student performance that are inconsistent with accumulated research. Much research and analysis can be found asserting that we know how to do things better.

In responding to the assigned title, we will not differentiate between issues and blocks to institutional change because we regard the blocks as the issues. The paper will, however, conclude with some directions that public policy and communities could take to improve human capital production and well-being.

Issues and Blocks to Institutional Change

For policy purposes human capital is too narrowly defined and conceptualized.

> Incentives embodied in belief systems as expressed in institutions determine economic performance through time and however we wish to define economic performance, the historical record is clear (North, p. 16).

Since elaboration and quantification of the human capital concept in the literature during the 1960s, human capital has been widely equated with number of years of schooling completed. Correspondingly, schools and other training agencies have been interpreted to be the principal producers of human capital. Although some emphasize that those skills and abilities rewarded in the form of higher earnings are actually acquired on the job, schooling still plays a role as a screening mechanism for who is hired for what kinds of on-the-job training. The equation is reinforced by both past and present research which continues to show a clear correlation between educational attainment and earnings. Accordingly, that belief has been sustained in public policy and education and training have been viewed as the nation's human capital investment strategy and school reform as the necessary institutional change to improve human capital production.

As concern for national economic performance has escalated, so too has public and political insistence on school reform. Criticism of public schools has been pervasive (Faux). Accordingly, the 1980s

produced a spate of educational reforms in state legislatures across the country (Vold and DeVitis) and spending on public schools increased in real terms. But despite the enacted reforms and increased spending, little improvement in traditional measures (test scores and dropout rates) of public education performance has occurred.

The Role of Family, Community and Support Services

The failure of reforms and increased funding to be matched by improved performance led to a search beyond the school for reasons and they have been found. It has been found that changes in families and communities and the distribution of income cannot be separated from students' performance in school. Poor children, for a wide variety of reasons, including health and nutrition, carry deficits with them to school and they greatly affect performance. In the words of Ernest Boyer, "Education problems cannot be divorced from the problems of the poor" (p. 182). More directly, in an extensive review of the productivity-of-schooling literature, Ganderton and Griffin find strong support for the hypothesis that, "the primary sources of variations in the rate of return to education are the variations in child quality" (p. 40). They also find that child quality measures have a greater impact on the rates of return to education for minority groups than for whites; conditions within the family play a larger role in determining educational success in minority families than in white families.

Broadening the Definition of Human Capital

These, and an impressive body of research documenting the effect of social deficits on the production of human capital, have led some researchers to extend the concept of capital to refer to social capital (Coleman) and cultural capital. These concepts have been coined in an effort to conceptualize the significant role of family and community in affecting school performance and, eventually, the production of human capital. An effect of the research and further conceptualization has been to broaden the concept of human capital and, therefore, potentially the range of public policies having a role to play in producing it.

Salamon offers such a broadened definition:

> Conceptually anything that contributes to population quality can be considered a form of human capital, particularly if it extends the useful life of the human capital stock or otherwise enhances the ability of people to contribute to the production process. These improvements in nutrition, in health, in housing, and in the quality of life generally can be considered forms of human capital (p. 6).

Such a definition is not simply academic; it is pertinent to how and what public policies are considered an integral part of human capital development. It also implies consideration of what human capital investments are likely to produce the greatest returns and, further, as we elaborate in the next section, a need for human capital investment strategies that place greater emphasis on coordination and linkage among the suppliers of services that are known to be pertinent to eventual human capital production.

The problems of public education are embedded in the "mix" of institutions in the society. Some analysts see the preoccupation with the failures of public schools as a way of avoiding confronting broader social problems (Vold and DeVitis, p. 7). As suggested by Passow, "Reforming schools is very different from reforming society. . . . (but) Both must occur simultaneously if real reform is to take place" (p. 683). Or Boyer states it more succinctly: ". . . we must realize that schools cannot do the job alone" (p. 190).

What Human Capital Is Needed?

Creating the conditions for a higher proportion of children to succeed in school is but one part of modifying the policy perspective on human capital production. Another issue concerns moving human capital away from a catch-all abstraction to a tangible and operational set of qualities, skills and competencies most likely to contribute to economic productivity and individual well-being of future workers. What skills and abilities does society need? Is our educational system producing human capital pertinent to the contemporary economic environment or is it simply producing graduates? There is public concern not only about whether students complete school, but what abilities and capacities they take with them when they do. If necessary human capital is to be produced then it must be specified. A curriculum composed of courses or Carnegie units may produce graduates, but may not produce economically-productive competencies.

In the division of labor with other institutions in producing human capital, Boyer sees the role of schools as:

> Empowering the nation's youth means helping them to become proficient in the written and spoken word, learn to think quantitatively, acquire a core of essential knowledge, develop the capacity to think creatively, and in the end, relate activities in the classroom to the realities of life. This is the investment in human capital schools must make. It is an investment that will secure the civic and economic future of the nation (p. 182).

Although it would be difficult to find any educator, or very few citizens for that matter, who would disagree with that specification, it remains more an aspiration than a reality. A part of the problem lies in an absence of effective measures of educational outcomes (and,

by extension, human capital). Most of our human capital development systems are framed primarily around inputs, not outcomes. Although flawed on many counts, there continues to be widespread use of norm-referenced standardized tests as measures of outcomes. To a great extent, school reform has been delayed by a preoccupation with raising test scores.

Beyond traditional forms of education and training, other forms of human capital are coming to be appreciated as important inputs to new forms of economic development. In recent years numerous research studies have documented the importance of *leadership* and *entrepreneurship* to the economic development of rural localities. Training to produce such capacities has become an integral part of many rural development strategies. Pertinent also is the role of education in producing an informed citizenry capable of being participants and making contributions to a learning society. That is an essential component of community development and the organizational entrepreneurship necessary for institutional change.

A Human Capital Deficit or Surplus?

Without further specification of what is meant by human capital (beyond completing a certain number of years of schooling) it is difficult to assess whether the supply of human capital is deficient. There are those who contend there is already a substantial amount of overeducation for jobs that are available. That is especially true in rural areas, a factor contributing to the continuing high rate of outmigration from many rural regions. Sizer-Killian and Beaulieu report from their research that almost a quarter of nonmetro workers had attained higher levels of education than were needed to carry out their job responsibilities. Similarly, Mishel and Teixeira, in their analysis of the *Workforce 2000* report, state, ". . . there is no evidence that large-scale job enrichment is taking place" (p. 1). McGranahan and Ghelfi report that the rate of increase in job-related educational requirements was somewhat lower in the 1980s than in the 1970s.

Overeducation, however, is not a recent phenomenon. Berg found that educational attainment actually exceeded job requirements in most job categories in the United States by the late 1960s. He emphasized that education may be more important as a credential for getting a job rather than a requirement for performing a job—a factor that works against those who lack educational credentials although not necessarily the ability to perform.

Measurement and assessment of human capital has also been complicated by recent growth of service sector employment. While increasing productivity and efficiency in, say, health and education services is essential, it is more difficult to conceptualize and measure. Education, for example, has been remarkably resistant to technological advance—along with social work it is the most labor intensive sector of the economy. In terms of national productivity, Packer comments that, ". . . improving the productivity of nurses and teachers and hospital and school administrators is as important as increasing the output of factory workers. Our international competitiveness will be undermined if health care costs continue to escalate and schools continue to fail one-fourth of their students, just as surely as if factories fail to modernize" (pp. 57-58).

Research, New Knowledge As Components of Human Capital

An essential part of a human capital investment strategy is investments in the discovery and application of new technologies that combine with human capital to increase productivity. Nevertheless, the number of people entering scientific fields of study has declined markedly in recent years as has the general science literacy of the nation's student body (Salamon, p. 25).

The development of comprehensive and integrated human capital development policies and strategies will be retarded unless the concept of human capital is broadened and made more operationally specific at the same time. At present it is arguable whether human capital investments are in excess of the requirements of available jobs or whether a human capital deficit is a limiting condition in creation of more highly productive employment and a learning society.

There is a lack of coordination and linkage among the suppliers of services that produce human capital and between human capital production and economic development.

As important as identifying the necessary components of a human development investment strategy, is articulating those components. Our strategies are not integrated in any one sector, let alone being integrated across sectors. With regard to education there is a widespread conviction that education continues to fail because approaches to school reform have been piecemeal rather than coherent (Boyer). Boyer comments that today's reform movement is not systematic; it is best described as a strategy of "excellence by exception." Reforms have worked to a degree in schools that were already performing reasonably well; they have generally failed in poorer schools and those serving disadvantaged populations.

But even if there were more coherent school reform strategies, they would not, as noted above, likely be sufficient to overcome the deficits that affect a growing proportion of students. It is increasingly clear that single service institutions alone cannot produce the quality and quantity of human capital the nation needs (Hornbeck). Although substantial investments are being made in human services and schools have been implored to provide more social services,

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those services are not coordinated and, therefore, many needs are unmet.

The problem of coordination is further exacerbated by an evolution of American federalism. Although logic dictates that a human capital investment strategy should be the responsibility of the federal government because of the mobility of human capital, states have the primary responsibility for human resource policies while the national government has responsibility for economic policy.

Human Capital and Economic Development

Roger Vaughan observes that the failure to coordinate education and economic development policy will become increasingly costly as human capital investments become more critical to economic productivity and competitiveness.

Most localities, including smaller rural localities, have some organized economic development effort. However, even at the small community level there is little history of coordination of human capital investments, social service provision and economic development efforts. Given the relative absence of higher-paying, higher-skill employment in rural areas (Sizer-Killian and Beaulieu) and the mobility of human capital, rural localities have greater difficulty capturing a return on their human capital investments. It is at this level where greater coordination of economic development efforts with education and training investments could be most immediately effective. Indeed, given the current structure of employment in rural areas, Sizer-Killian and Beaulieu advocate that rural development efforts that focus on expanding and upgrading the job structure are more critical than are efforts to invest in more human capital (p. 38).

Development of a coherent human capital investment strategy linked with economic development strategies is further compounded by the complexity and number of players in the policy arena. In elementary and secondary education alone there are more than 20,000 independent decision/policymaking bodies. Together, states and localities account for 94 percent of the financial support for elementary and secondary education.

Although our frame of reference is largely state and national policies, the educational division of labor between states and localities makes coordination at the local level just as critical if not more so. Nationwide, localities invest more than 40 percent of the total cost of elementary and secondary education and a lesser but still significant amount of the budget for community colleges and vocational schools.

Specificity of goals.

Notwithstanding the existence of Goals 2000 that emerged from the 1990 White House Conference on Education, a political, public

and education consensus about the outcomes expected from public schools has not emerged. Given the absence of well-defined goals, it has been difficult to determine if progress is occurring. Further, from the perspective of this paper, it is even more difficult to know whether human capital, pertinent to the competitive environment of the 1990s and beyond, is being produced.

There is a widespread conviction that more money should be spent on human capital development. But absent effective outcome measures, we lack criteria to know if we are spending too little money for human capital development; too much; or whether what we are spending money for is effective (Deller and Rudnicki). When the different components of human capital production discussed above are aggregated, investments continue to shrink in real dollars. But knowing whether the investments being made are producing a satisfactory return awaits development of improved outcome measures. An indication of this dilemma can be found in the relationship between expenditures per student and student performance (test scores). Across numerous studies, that relationship produces a generally positive but weak correlation (Hanushek, 1981; Walberg and Fowler). In reviewing one hundred forty-seven studies of educational production functions, Hanushek found fewer than 10 percent of the studies reported statistically significant positive relationships between such variables as teacher-pupil ratio; teacher education; teacher experience; teacher salary; test scores; and other outcomes. That is not an indication we are spending too much for education, but rather that for which we are spending money has relatively direct little effect on learning (Deller and Rudnicki).

The tension between political efforts aimed at greater standardization of education to improve accountability, and the flexibility and site-based management necessary for effective educational innovation.

There are two opposing perspectives affecting public education in American society, with persuasive arguments and strong proponents available to support each side. Reform efforts have generally concentrated on two fundamentally contradictory courses: 1) greater centralization, standardization and regulation of schools and 2) encouraging innovations in the content and procedures of education. Greater centralization emphasizes greater state and federal control in an effort to uniformly improve performance. Innovation, on the other hand, places an emphasis on flexibility, site-based management and local control. Both are occurring simultaneously and exacerbating a confusion of goals—a schizophrenic situation for school administrators (Boyd).

Effective school reform will require striking a balance between the two. Both are necessary and need not be contradictory but they are. There is agreement among many education scholars that the states and nation should take the lead in setting key values, parameters and outcomes (e.g., Boyd; Boyer; Hornbeck) and local schools

should be held accountable for achieving those outcomes. But while overall objectives should be established at the state and national level, how those objectives are achieved should be a matter of substantial local discretion. As suggested by Hornbeck, ". . . what we teach should be basically the same for all students in the sense that it is commonly challenging. But how we teach, when school is in session, where teaching and learning occurs, and who teaches should be variables" (p. 375). Such a division of labor greatly increases the probability of education adapting to very different populations of students with very different needs and also exploiting educational opportunities in the local environment. In effect, such freedom is an essential component of educationally-effective innovation. Effective schools have been found to be those with strong educational leadership at the building level (site-based management). But, again, there is an emphasis and measurement problem. Public education policy has been preoccupied with inputs, not with outcomes. There are many reasons, not the least of which is that inputs have been more easily measured and supported with resources than outcomes. Ray Marshall has observed that any organization tends to get back pretty much what it measures and rewards. That observation applies to nothing so much as public education.

As emphasized above, outcomes have been largely limited to evaluation of norm-referenced standardized test scores. Vold and DeVitis have observed that, ". . . whatever leads to an improvement in test scores is assumed to constitute reform" (p. 5). High on the agenda of public policy should be devising a broader range of more informative and practically valuable outcome measures. Boyer observes that the school reform movement is failing not just from lack of direction, but from confusion about how to measure results.

But in the absence of such measures, state school reform efforts have focused more on standardizing and regulating inputs than outputs—a trend counter-productive to effective educational innovation at the local level. The emphasis needs to be reversed. Schools should be held accountable for results, not hassled by regulations pertaining to procedures (Boyer).

For large numbers of today's students, there is a growing lack of incentive to make human capital investments in themselves.

> Poverty and social decay, pressures on family life, the demands of the burgeoning service sector for low-wage teenage labor, television and other cultural diversions, and the indifference of employers to educational achievement reduces [sic] incentives for students to perform in school (Faux, p. 12).

Vaughan observes that the growing demand for better-educated workers and the increased rate of return to education may create a dual labor market in which the earnings of the well-educated grow rapidly while the earnings of the less-educated fall. These trends

have occurred concurrently with a dramatic growth in demand for consumer services workers. That growth, coupled with a demographic dip in the number of entry level workers during the 1980s, added momentum to the emergence of a dual economy.

About 750,000 students drop out of school each year and this has generally been interpreted as a further indication of failure of the educational system. However, the combination of a smaller cohort of entry level workers and the 1980s growth in service sector employment seems to be more responsible than what does or does not occur in school. If jobs are not available that utilize and reward higher levels of education, then, for the student with no plans for post-secondary education, there are short-run opportunity costs associated with remaining in school. These, however, are workers whose abilities and earnings will not only affect their own life chances in later years, but also affect the future performance of the nation's economy.

Supporting evidence of the influence of the economy on dropouts is provided by Killian and Parker's analysis of the relationship between educational attainment of the work force and job growth in the United States during the 1970s and 1980s. They found no significant relationship between average educational attainment of workers and job growth in either metro or non-metro areas. However, they did find that in metro areas during the 1980s, job growth was related to the proportion of college graduates in the population and *the proportion of school dropouts*. The greater the job growth, the higher the percentage of school dropouts. Our own analysis shows that poverty status and local job growth account for equal proportions of the school dropout variance nationally. The lowest school dropout rates are found in the rural upper Midwest where job growth was slow and even negative during the 1980s.

There are significant discrepancies between public and political beliefs about human capital and how it is acquired and accumulated research results.

Society casts its schools in its own image (Vold and DeVitis, p. 155).

> Belief structures get transformed into societal and economic structures by institutions—both formal rules and informal norms of behavior . . . .Mental models are the internal representations that individual cognitive systems create to interpret the environment; institutions are the external (to the mind) mechanisms individuals create to structure and order the environment (North, pp. 12-13).

As North contends, beliefs are the foundation of the institutions that structure social and economic performance. U.S. public education is one of those institutions and it embodies a broad range of be-

liefs, some of which have been rendered invalid by recent changes in other institutions. Packer (p. 46) is one of many who emphasize that our human resource challenge has changed while the way we educate and train children and adults has not. Our ways of educating are not intentionally flawed or without foundation. Indeed they are generally based on premises accepted as valid by both educators and the public and they were most likely valid at one time. Those beliefs apply to both educational methods and content—there has been hardly any change in educational curricula this century and there is substantial evidence that there is a focus on providing skills and socialization for an economy that no longer exists.

One of the more fundamental beliefs concerns public and individual responsibility for education and training. Hornbeck states that belief as follows:

> We have constructed social policies on the premise of equality of opportunity and, if the individual fails to take advantage of that opportunity, it is his tough luck. To assume the contrary, that the failure of students to perform strikes at the heart of the nation's survival, not just the individual's well-being, is to change radically the character of the legislation (Hornbeck, p. 369).

This belief, firmly embedded in the traditional American value placed on individualism, presents a potential threat not just to individual well-being, but to collective well-being as well. As suggested by Thurow, "To work, modern economies need a mass well-educated labor force. An educated elite does not suffice. Illiteracy hurts the literate" (p. 187).

In reviewing the literature I have encountered numerous authors who state, in effect, that ignorance is not the problem with regard to school reform, it is a matter of acting on what we know. I recently shared a program with the dean of our college of education who entitled his remarks, "We Can No Longer Pretend Not to Know What We Know." What do we know that we are not acting on? Following is but a sample of things we know, but which have not yet served as a basis for institutional restructuring.

- We know that the future cost to society of children born to mothers who received inadequate prenatal care are great in terms of substandard school performance, expensive health care, social services, etc.
- We know that standardized tests are culturally biased and are not an effective measure of a person's job-related abilities or, for that matter, their ability to learn how to learn.
- We know that preschool programs such as Head Start enable disadvantaged children to do better in school and that return on the investment is great.

- We know that the social capital investments in children before beginning school produce an impressive return in terms of school performance and obviating other downstream social costs.
- We know that there are young people graduating from high school who are capable of college and other post-secondary education but cannot afford it.
- We know that in order for students to effectively learn how to learn requires an active rather than passive role—education and learning are most effective when they extend beyond the walls of classrooms.
- We know that effective schools are ones in which there is strong educational leadership and a great deal of flexibility to adapt learning to the needs of particular groups of students.
- We know that exposure to a given subject matter for a specified period of time is not a substitute for mastering that subject matter.
- We know there is little or no return on human capital investments unless there are jobs that use and reward higher levels of skill and training.
- We know that the aggregate amount of human capital investments and returns on those investments are greater in primary than in secondary industries and sectors.

These are but a small sample of what is known about the interrelationship of education, learning and production of human capital. But until such time as many existing political and public beliefs about education are replaced by some of the above, there is little likelihood of fundamental change in the institution of education. We are stuck with a set of beliefs that shape choices and limit institutional change.

Demographic change and change in the workforce.

There are education commentators who observe that America is not reacting to the education crisis with a sufficient sense of urgency (e.g., Boyer; Hornbeck). If there were no other compelling reason, pending demographic changes supply one. Although there are many demographic changes affecting the production of human capital, we will concentrate on two: 1) the current and expected changes in the composition of the work force and 2) projected changes in the age distribution and household composition of the population.

Packer observes that the labor force of 2010, ". . . will have to carry a triple burden: supporting themselves and their own children; supporting the elderly who depend on social security and private health and pension plans; and, carrying the banner of the United States in foreign competition" (p. 46). But that labor force will have a

substantially different appearance because the baby boomers who will begin exiting the work force by 2010 or before will be composed predominantly of white males. They will be disproportionately replaced by minorities, women and (depending on U.S. policies) immigrants. That process is already underway. According to the Hudson Institute's *Workforce 2000* (Packer, 1990), additions to the U.S. workforce between 1985 and 2000 will be distributed as follows: U.S. white males 16 percent, U.S. white females 42 percent, U.S. minorities 20 percent, and immigrants to the U.S. 22 percent. To a substantial degree, the baby boom generation will be replaced by workers whom the present system of human capital production has served least well.

A further indication of these changes is the projection that by 2000, nearly one-third of school-age children will be from minority populations. An uncertainty in these projections is the size of the immigrant cohort and whether immigration laws will be changed as a shortage of entry level workers occurs early in the next century. Ray Marshall is among those who recommend tightening our immigration policies to impose labor market tests on immigrants and at the same time integrating existing immigrants into American society as quickly as possible.

The aging baby boom generation, in addition to the effect their exit will have on the composition of the work force, is contributing to a substantial change in the household composition of the population. Married couples with children currently account for only 26 percent of all households and that proportion is destined to decline. By 2000, non-family households will account for 32 percent of all households. An important issue associated with the aging of the population and the declining percentage of households with children is the prospect of declining public incentives to invest in human capital. This is an issue that already confronts many rural communities having a disproportionately large retirement-age population. Those communities often find it difficult to pass local school levy increases and/or bond issues (Deller). In the national context, entitlements for the elderly have been more vigorously supported than investments in the quality of the future work force.

Conclusion

The nation's human capital problem cannot be laid at the doorstep of a public that undervalues the importance of education to individual and national well-being. Indeed, the public seems to have invested greater faith in the capacity of schooling alone to reduce poverty, solve social problems, produce local economic development, sustain national economic competitiveness and restore a civil and learning society than research and experience can justify. To the extent that those outcomes have been produced in the past, they cannot be credited to schooling alone—they were a consequence of benefits

produced by a "mix" of institutions, e.g., family, community, economy, religion, etc. But even in the past, history shows that schooling contributed little to elimination of poverty or to generating local economic development. Even if the schooling reforms and investments of the past ten years had been successful in raising average test scores and reducing dropout rates, it is doubtful if all the public's expectations for education would have been achieved.

The problem we have emphasized is that a broader range of policy measures must be considered as pertinent in order to improve student achievement and increase production of needed human capital. Research offers little encouragement that further movement with traditional education policy measures alone will have much effect on student achievement (Deller and Rudnicki). The key seems to lie in linking education policy initiatives with other human resource policy efforts. There are some schools that are better than others—that is clear. But all schools are encountering difficulty overcoming the social, nurturing and other deficits a growing number of children bring with them to school. Changes within the school, intended to improve student achievement can be, and are being, negated by changes outside the school that affect student learning and motivation to learn. Despite widespread criticism, schools actually work reasonably well when provided with a healthy and motivated student body. But improving learning alone, without consideration to what is learned and how that relates to human capital needs and prospects for better employment, is unlikely to improve returns to public and private human capital investments.

Schools are sandwiched in between a need for change among institutions that supply the most important input to effective education—the health and well-being of students arriving at school to be educated—and those institutions on the human capital consumption side that supply the incentives (or disincentives) for both public and private investments. An effective human capital investment strategy would integrate those investments.

The policy environment for education/human capital production creates an important opportunity for public policy education. First, relevant policy- and decision-makers are accessible to public policy educators more so than in, say, agriculture, health, etc. That is true because 15,000 local public school districts make and implement policies that affect how much of what students learn in public schools. And the thrust of current public school restructuring initiatives is at least partially directed toward local schools taking even greater responsibility for devising strategies to improve learning, attitudes and aspirations of students. Local school administrators, board members, parents and community leaders are prospective audiences for public policy education programs. Secondly, public policy education can make a contribution because, as this paper has attempted to show, beliefs about effective public education are widely at variance

with accumulated research and knowledge about what contributes to effective schooling. Current beliefs sustain current policy efforts and are at the foundation of the institutions that affect human capital production. If the institutions are to change, we side with North in emphasizing that beliefs that are inconsistent with current realities will have to change. Thus there is an opportunity to affect policy by the provision of objective information and analysis of policy alternatives at all levels. A part of the policy education process should also be to assist local policy decision makers to identify policy measures that are accessible and can be implemented at the local level. That includes encouraging a more integrated and holistic approach to education and local community and economic development efforts.

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